

EV Charging and EVSE Plug-In Adapter

Accessories for SL1040A and SL1047A | EV & EVSE Test

SL1049A-2XX EV Charging Adapter – Non-Cooled

SL1051A-2XX EV Charging Adapter – Liquid-Cooled

SL1040A-6XX EV Charging Adapter – EMC

SL1049A-1XX EVSE Plug-In

SL1049A-3XX EVSE Plug-In – High-Power

SL1040A-7XX EVSE Plug-In – EMC



Test Charging Interfaces of EV and EVSE

Keysight's SL1040A-ST2 Scienlab Charging Discovery System – Portable Series (CDS Portable Series), SL1040A-EMC/EM2 Scienlab Charging Discovery System – EMC Series (CDS EMC Series), and SL1047A Scienlab Charging Discovery System – High-Power Series (CDS HP Series) are modular solutions for conformance and interoperability testing of the charging interfaces between the Electric Vehicle (EV) and the EV Supply Equipment (EVSE).

Thanks to the modular design, the CDS can be configured to customers' specific needs for testing and validating the charging interfaces.

This data sheet provides an overview of the available and compatible adapters and inlets to perform an EV/EVSE charging test.



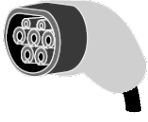
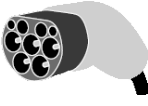
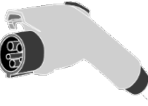
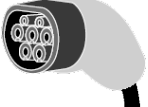
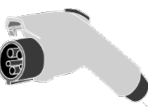
Figure 1. From left to right: SL1040A-EMC/EM2 CDS EMC Series, SL1040A-ST2 CDS Portable Series, and SL1047A CDS High-Power Series.

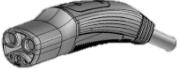
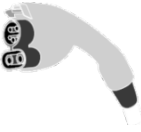
System coding check feature

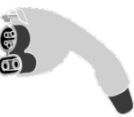
The system coding check enables the identification of the specific types of EV charging and EVSE plug-in adapters and ensures proper software functionalities and compatibility within the CDS. The system coding check can be enabled for existing or new CDS (CDS Portable Series and CDS HP Series).

From serial number AS22-003816 on, EV charging and EVSE plug-in adapters are compatible with the system coding check feature. Articles with serial numbers prior to serial number AS22-003816 must be checked for compatibility by a Keysight service engineer. Also, a CDS calibration is required to enable the system coding check.

SL1049A-2XX EV Charging Adapter – Non-Cooled

EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross-section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for AC charging							
EV charging adapter Type 2 AC [SL1049A-202]		250 V _{L-N} 480 V _{L-L}	32 A	L1, L2, L3, N: 4x 6 mm ² PE: 1x 6 mm ² CP, PP: 2x 0.5 mm ² -40°C...+50°C	3 kg	IEC 62196-2	SL1047A SL1040A-ST2
EV charging adapter GB/T AC [SL1049A-205]		250 V _{L-N} 440 V _{L-L}	32 A	L1, L2, L3, N: 4x 6 mm ² PE: 1x 6 mm ² CP, CC: 2x 0.5mm ² -30°C...+50°C		GB/T 20234.2	SL1047A SL1040A-ST2
EV charging adapter Type 1 AC [SL1049A-208]		240 V _{L-N}	80 A	L1, N: 2x 16mm ² PE: 1x 10 mm ² CP, CS: 2x 1.5 mm ² -30°C...+50°C	4 kg	IEC 62196-2/ SAE J1772	SL1047A
EV charging adapter Type 1 AC two-phase (L1, L2) [SL1049A-212]		250 V _{L-L}	32 A	L1, N: 2x 3.31 mm ² PE: 1x 5.26 mm ² CP, CS: 2x 22 AWG (0.64 mm ²) -30°C...+50°C	3 kg	IEC 62196-2/ SAE J1772	SL1047A SL1040A-ST2
EV charging adapter Type 2 AC [SL1049A-213]		250 V _{L-N} 480 V _{L-L}	63 A	L1, L2, L3, N: 4x 16 mm ² PE: 1x 16 mm ² CP, PP: 2x 0.75 mm ² -30°C...+50°C	5 kg	IEC 62196-2/ SAE J1772	SL1047A
EV charging adapter Type 1 AC single-phase (L1, N) [SL1049A-214]		250 V _{L-N}	32 A	L1, N: 2x 3.31 mm ² PE: 1x 5.26 mm ² CP, CS: 2x 22 AWG (0.64 mm ²) -30°C...+50°C	3 kg	IEC 62196-2/ SAE J1772	SL1047A SL1040A-ST2

EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross-section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for AC charging							
EV charging adapter NACS AC [SL1049A-260]		240 V _{L-N}	32 A	L, N: 2x 5.26 mm ² PE: 1x 5.26 mm ² CP, CS: 2x 22 AWG (0,64mm ²) -40°C...+50°C	3 kg	SAE J3400	SL1047A SL1040A-ST2
EV charging adapter NACS AC [SL1049A-261]		300 V _{L-N}	80 A	L, N: 2x 13.3 mm ² PE: 1x 8.34 mm ² CP, CS: 2x 22 AWG (0,32mm ²) -40°C...+50°C	5 kg	SAE J3400	SL1047A
Adapter for DC charging							
EV charging adapter CCS Type 1 DC [SL1049A-203]		1000 V	200 A	DC±: 2x 1 AWG (50 mm ²) PE: 1x 6 AWG (16 mm ²) CP, CS, PT1000: 4x 16 AWG (1.5 mm ²) -30°C...+40°C	9 kg	IEC 62196-3/ SAE J1772	SL1047A SL1040A-ST2
EV charging adapter CCS Type 2 DC [SL1049A-204]		1000 V	200 A	DC±: 2x 50 mm ² PE: 1x 25 mm ² CP, PP, PT1000: 6x 0.75 mm ² -30°C...+50°C	11 kg	IEC 62196-3	SL1047A SL1040A-ST2
EV charging adapter GB/T DC [SL1049A-206]		1000 V	250 A	DC±: 2x 80 mm ² PE: 1x 25 mm ² S±, CC1/2, PTC: 6x 0.75 mm ² A±: 2x 4 mm ² -30°C...+50°C	16 kg	GB/T 20234.3	SL1047A SL1040A-ST2
EV charging adapter CHAdeMO [SL1049A-207]		500 V	125 A	DC±: 2x 35 mm ² PE: 0.75 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.75 mm ² -30°C...+50°C	11 kg	CHAdeMO association	SL1047A SL1040A-ST2

EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross-section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for DC charging							
EV charging adapter CCS Type 2 DC [SL1049A-209]		1000 V	Up to 350 A*	DC± : 2x (2x 50 mm ²) PE: 1x 50 mm ² PT1000, CP, PP: 6x 0.75 mm ² -40°C...+90°	20 kg	IEC 62196-3	SL1047A SL1040A-ST2
EV charging adapter CCS Type 1 DC [SL1049A-210]		1000 V	300 A	DC±: 2x 1 AWG (50 mm ²) PE: 1x 6 AWG (16 mm ²) CP, PP, PT1000: 6x 16 AWG (0.75 mm ²) -30°C...+40°C	11 kg	IEC 62196-3/ SAE J1772	SL1047A SL1040A-ST2
EV charging adapter CHAdeMO [SL1049A-211]		600 V	200 A	DC±: 2x 67.4 mm ² PE (Signal): 0.824 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.824 mm ² -30°C...+50°C	14 kg	CHAdeMO association	SL1047A SL1040A-ST2
EV charging adapter NACS [SL1049A-262]		1000 V	350 A	DC±: 2 x 52.4 mm ² PE: 1 x 3.31 mm ² CP, PP, PT1000: 4 x 18 AWG (0.82 mm ²) -40°C...+40	11 kg	SAE J3400	SL1047A SL1040A-ST2

*250 A is permanently possible (300 A permanently only at 30 degrees Celsius, up to 350 A permanently only at 20 degrees Celsius)

Note: Limited by EV plug manufacturer's certification. All charging adapters have a standard length of

5 m. Other lengths are available on request.

On the secondary side, all EV charging adapters are equipped with a compatible connector, as shown in the following photos:



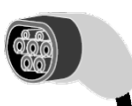
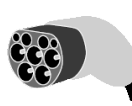
Figure 2. Example of a non-cooled EV charging adapter (CCS Type 2)

SL1051A-2XX EV Charging Adapter – Liquid-Cooled

EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross- section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for DC high-power charging							
Liquid-cooled charging adapter CCS Type 1 DC [SL1051A-200]		1000 V	500 A	DC±: 2x 36 mm ² PE: 1x 25 mm ² CP, CS, PT1000: 8x 0.5 mm ² -35°C...+50°C	13 kg	IEC 62196-3/ SAE J1772	SL1047A
Liquid-cooled charging adapter CCS Type 2 DC [SL1051A-201]		1000 V	500 A	DC±: 2x 36 mm ² PE: 1x 25 mm ² CP, PP, PT1000: 8x 0.5 mm ² -35°C...+50°C		IEC 62196-3	SL1047A
Liquid-cooled charging adapter NACS DC [SL1051A-203]		1000 V	600 A	DC±: 2 x 36 mm ² PE: 1 x 25 mm ² CP,PP,PT1000: 8 x 0.5 mm ² -35°C...+50°C	13 kg	SAE J3400	SL1047A

Note: The liquid-cooled charging adapter consists of the cabling itself, which is equipped with a plug-in module to support easy interchange. This plug-in module can be inserted into the corresponding slide-in of the Scienlab Cooling Unit (SL1048A-CU1).

SL1040A-6XX EV Charging Adapter – EMC

EMC-EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross- section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for AC charging							
EMC-EV charging adapter Type 1 AC [SL1040A-601]		240 V _{L-N}	30 A	L1, N: 2x 10 AWG (6mm ²) PE: 1x 10 AWG (6 mm ²) CP, PP: 2x 18 AWG (0.5 mm ²) -20°C...+40°C	3 kg	IEC 62196-2 / SAE J1772	SL1040A-EMC
EMC-EV charging adapter Type 2 AC [SL1040A-602]		250 V _{L-N} 480 V _{L-L}	32 A	L1, L2, L3, N: 4x 6 mm ² PE: 1x 6 mm ² CP, PP: 2x 0.5 mm ² -20°C...+50°C		IEC 62196-2	SL1040A-EMC
EMC-EV charging adapter GB/T AC [SL1040A-605]		250 V _{L-N} 440 V _{L-L}	32 A	L1, L2, L3, N: 4x 6 mm ² PE: 1x 6 mm ² CP, PP: 2x 0.5 mm ² -20°C...+50°C		GB/T 20234.2	SL1040A-EMC
Adapter for DC charging							
EMC-EV charging adapter CCS Type 1 DC [SL1040A-603]		1000 V	200 A	DC±: 2x 1 AWG (50 mm ²) PE: 1x 6 AWG (16 mm ²) CP, CS, PT1000: 4x 16 AWG (1.5 mm ²) 20°C...+40°C	9 kg	IEC 62196-3 / SAE J1772	SL1040A-EMC
EMC-EV charging adapter CCS Type 2 DC [SL1040A-604]		1000 V	200 A	DC±: 2x 50 mm ² PE: 1x 25 mm ² CP, CS, PT1000: 4x 0.75 mm ² -20°C...+50°C	11 kg	IEC 62196-3	SL1040A-EMC
EMC-EV charging adapter GB/T DC [SL1040A-606]		1000 V	250 A	DC±: 2x 70 mm ² PE: 1x 25 mm ² S±, CC1/2, PTC: 12x 0.75 mm ² A±: 2x 4 mm ² -20°C...+50°C	16 kg	GB/T 20234.3	SL1040A-EMC
EMC-EV charging adapter CHAdeMO [SL1040A-607]		500 V	125 A	DC±: 2x 35 mm ² PE: 0.75 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.75 mm ² -20°C...+50°C	11 kg	CHAdeMO association	SL1040A-EMC

EMC-EV charging adapter option class	Adapter	Rated voltage	Rated current	Cable cross-section Ambient temperature	Approx. weight	Standard	CDS compatibility
Adapter for DC charging							
EMC-EV charging adapter CCS Type 2 DC [SL1040A-609]		1000 V	250 A	DC±: 2x (2x 50 mm ²) PE: 1x 50 mm ² CP, CS, PT1000: 4x 0.75 mm ² -20°C...+90°C	18 kg	IEC 62196-3	SL1040A-EMC
EMC-EV charging adapter CHAdeMO [SL1040A-610]		600 V	200 A	DC±: 2x 67.4 mm ² PE: 0.824 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.824 mm ² -20°C...+50°C	15 kg	CHAdeMO association	SL1040A-EMC

SL1049A-1XX EVSE Plug-In

EVSE plug-in option class	Plug-in adapter	Rated voltage	Rated current	Inlet cross-section Ambient temperature	Standard	CDS compatibility
Plug-in adapter						
EVSE plug-in GB/T AC [SL1049A-103]		250 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 6mm ² PE: 6 mm ² CP, CC: 2x 0.5 mm ² +5°C...+40°	GB/T 20234.2	SL1040-ST2 SL1047A
		440 V _{L-L} AC				
EVSE plug-in GB/T DC [SL1049A-104]		1000 V DC	250 A DC	DC ±: 2x 70 mm ² PE: 25 mm ² A±: 2x 2.5 mm ² S±, CC1/2, PT1000: 6x 0.5 mm ² +5°C...+40°	GB/T 20234.3	SL1040-ST2 SL1047A
EVSE plug-in CHAdeMO [SL1049A-105]		500 V DC	125 A DC	DC ±: 2x 38 mm ² PE: 0.75 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.34 mm ² +5°C...+40°C	CHAdeMO association	SL1040-ST2 SL1047A
EVSE plug-in CCS Type 1 [SL1049A-108]		250 V _{L-N} AC	32 A AC	DC ±: 2x 95 mm ² L1, N: 2x 6mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ² PT1000: 4x 0.5 mm ² locking actuator: 4x 0.5 mm ² +5°C...+40°C	IEC ,62196-2 (AC)	SL1040-ST2 SL1047A
		1000 V DC	>250 A ¹ DC		IEC 62196-3 (DC)	

EVSE plug-in option class	Plug-in adapter	Rated voltage	Rated current	Inlet cross-section Ambient temperature	Standard	CDS compatibility
Plug-in adapter						
EVSE plug-in CCS Type 2 [SL1049A-109]		250 V _{L-N} AC	32 A AC	DC ±: 2x 95 mm ² L1, L2, L3, N: 4x 6mm ² PE: 25 mm ² CP, PP: 2x 0.5 mm ² PT1000: 4x 0.5 mm ² locking actuator: 4x 0.5 mm ² +5°C...+40°	IEC 62196-2 (AC)	SL1040-ST2 SL1047A
		480 V _{L-L} AC			IEC 62196-3 (DC)	
		1000 V DC	>250 A ¹ DC			
EVSE plug-in CHAdeMO [SL1049A-110]		1000 V DC	200 A DC	DC ±: 2x 70 mm ² PE: 0.5 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.5 mm ² +5°C...+40°	CHAdeMO association	SL1040-ST2 SL1047A
EVSE plug-in NACS [SL1049A-114]		300 V AC	32 A AC	L1,N: 2 x 6 mm ² PE: 10 mm ² CP, PP: 2 x 0.5 mm ² PT1000: 4 x 0.5 mm ² locking actuator: 4 x 0.5 mm ² +5°C...+40°C	SAE J3400	SL1040-ST2 SL1047A
EVSE plug-in NACS [SL1049A-116]		1000 V DC	300 A AC	DC± 2 x 120 mm ² PE: 10 mm ² CP, PP: 2 x 0.5 mm ² PT1000: 4 x 0.5 mm ² locking actuator: 4 x 0.5 mm ² +5°C...+40°C	SAE J3400	SL1040-ST2 SL1047A

Plug-in adapter for high-power charging

High-power EVSE plug-in CCS Type 1 [SL1049A-301]		250 V _{L-N} AC	80 A AC	DC ±: 2x 95 mm ² L1, N: 2x 16mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ² PT1000: 4x 0.5 mm ² locking actuator: 4x 0.5 mm ²	IEC 62196-2 (AC)	SL1047A
		1000 V DC	>250 A ² DC	+5°C...+40°C	IEC 62196-3 (DC)	
High-power EVSE plug-in CCS Type 2 [SL1049A-302]		250 V _{L-N} AC	32 A AC	DC ±: 2x 95 mm ² L1, L2, L3, N: 4x 6mm ² PE: 25 mm ² CP, PP: 2x 0.5 mm ² PT1000: 4x 0.5 mm ² locking actuator: 4x 0.5 mm ²	IEC 62196-2 (AC)	SL1047A
		480 V _{L-L} AC			IEC 62196-3 (DC)	
		1000 V DC	>250 A ² DC	+5°C...+40°C		
High-power EVSE plug-in NACS [SL1049A-305]		300 V AC	80 A AC	L, N: 2 x 16 mm ² PE: 10 mm ² CP, PP: 2 x 0.5 mm ² PT1000: 4 x 0.5 mm ² locking actuator: 4 x 0.5 mm ²	SAE J3400	SL1047A
				+5°C...+40°C		
High-power EVSE plug-in NACS [SL1049A-304]		1000 V DC	600 A DC	DC± 2 x 2 x 120 mm ² PE: 10 mm ² CP, PP: 2 x 0.5 mm ² PT1000: 4 x 0.5 mm ² locking actuator: 4 x 0.5 mm ²	SAE J3400	SL1047A
				+5°C...+40°C		
High-power EVSE plug-in CCS Type 2 [SL1049A-307]		480 V _{L-N} AC	63 A AC	DC ±: 2x 150 mm ² L1, L2, L3, N: 4x 16mm ² PE: 25 mm ² CP, PP: 2x 0.5 mm ² PT1000: 4x 0.5 mm ² locking actuator: 4x 0.5 mm ²	IEC 62196-2 (AC)	SL1047A
		1000 V DC	500 A DC	+5°C...+40°C	IEC 62196-3 (DC)	

1. Maximum current values are limited by the available EV inlet itself. Higher ampacity will be available as soon as inlet availability improves. The contactor can drive up to 400 A. Contact the Keysight field engineer for more information.
2. Contactor can drive up to 600 A. Contact the Keysight field engineer for more information.

Note: The weight of the plug-in adapters is between 3.3 and 4.5 kg.

The following exemplary photo shows a plug-in adapter from the side and reverse view:



Figure 3. Plug-in adapter from side view (left) and reverse view (right)

SL1040A-7XX EVSE Plug-In – EMC

EMC-EVSE plug-in option class	Plug-in	Rated voltage	Rated current	Inlet cross-section Ambient temperature	Standard	CDS compatibility
Plug-in for AC charging						
EMC-EVSE plug-in CCS Type 1 [SL1040A-701]		250 V _{L-N} AC	32 A AC	DC ±: 2x 70 mm ² L1, N: 2x 6mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ²	IEC 62196-2 / SAE J1772	SL1040A-EM2
		850 V DC	200 A DC	+5°C...+40°	IEC 62196-3 / SAE J1772	
EMC-EVSE plug-in CCS Type 2 [SL1040A-702]		250 V _{L-N} AC	32 A AC	DC ±: 2x 70 mm ² L1, L2, L3, N: 4x 6mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ²	IEC 62196-2	SL1040A-EM2
		480 V _{L-L} AC				
		850 V DC	200 A DC	+5°C...+40°C	IEC 62196-3	
EMC-EVSE plug-in GB/T AC [SL1040A-703]		250 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 6mm ² PE: 6 mm ² CP, CC: 4x 0.5 mm ²	GB/T 20234.2	SL1040A-EM2
		440 V _{L-L} AC				
EMC-EVSE plug-in GB/T DC [SL1040A-704]		1000 V DC	250 A DC	DC ±: 2x 70 mm ² PE: 25 mm ² A±: 2x 2.5 mm ² S±, CC1/2, PT1000: 6x 0.5 mm ²	GB/T 20234.3	SL1040A-EM2
EMC-EVSE plug-in CHAdeMO [SL1040A-705]		500 V DC	125 A DC	DC ±: 2x 38 mm ² PE: 0.75 mm ² CAN H/L, CSS1/2, VCP, CPD: 6x 0.34 mm ²	CHAdeMO association	SL1040A-EM2
				+5°C...+40°		

Plug-in for AC charging						
EMC-EVSE plug-in CCS Type 1 [SL1040A-706]		250 V _{L-N} AC	80 A AC	DC ±: 2x 95 mm ² L1, N: 2x 16mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ²	IEC 62196-2 / SAE J1772	SL1040A-EM2
		1000 V DC	250 A DC	+5°C...+40°C	IEC 62196-3 / SAE J1772	
EMC-EVSE plug-in CCS Type 2 [SL1040A-707]		250 V _{L-N} AC	32 A AC	DC ±: 2x 95 mm ² L1, L2, L3, N: 4x 6mm ² PE: 25 mm ² CP, CS: 2x 0.5 mm ²	IEC 62196-2	SL1040A-EM2
		480 V _{L-L} AC				
		1000 V DC	250 A DC	+5°C...+40°C	IEC 62196-3	

Note: For SL1040A-706, continuous current with 200 A DC is possible or interval operation with 250 A DC (max 2.5 hours on and 1 hour off).

Advanced Hardware Options

Plug-in adapter to connect the CDS to a power source

Plug-in adapter		Rated voltage	Rated current	Inlet cross-section Ambient temperature	Approx. weight	CDS compatibility
Plug-in Cassette for EVSE emulation [SL1049A-106]**		300 V _{L-N} AC	32 A AC	DC ±: 2x 120 mm ² L1, L2, L3, N: 4x 6mm ² PE: 35 mm ²	5.7 kg	SL1047A SL1040A-ST2
		500 V _{L-L} AC				
		1500 V DC	400 A DC*	+5°C...+40°		
Plug-in CEE [SL1049A-107]		230 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 6mm ² PE: 6 mm ² +5°C...+40°	3.8 kg	SL1040A-ST2
		400 V _{L-L} AC				

*400 A DC intermittent (90 min on, 30 min off), 350 A continuously.

** fully equipment with all signals

Note: RCD type B protection is included. For EVSE emulation a power source must be connected to the CDS HP Series. For this connection, an adequate adapter cable is required.

Adapter cable to connect a power source/load to the CDS (EV and EVSE emulation)

Adapter cable for EV/EVSE emulation option class	Rated voltage	Rated current	Max. wire cross-section Ambient temperature	Cable length	Approx. weight	CDS compatibility
Adapter for generic EV/EVSE emulation AC [SL1049A-215]	300 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 6 mm ² PE: 6 mm ² -20°C...+40°C	5 m	4 kg	SL1040A-ST2 SL1047A
	500 V _{L-L} AC					
Adapter for generic EV/EVSE emulation AC [SL1049A-216]	300 V _{L-N} AC	100 A AC	L1, L2, L3, N: 4x 16 mm ² PE: 16 mm ² -20°C...+40°	5 m	5 kg	SL1047A
	480 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1040A/SL1047A to RP7972A/RP7963A without rack [SL1049A-219]	1500 V DC	60 A DC	DC±: 2x 10 mm ² PE: 4 mm ² -20°C...+40°C	5 m	5 kg	SL1040A-ST2 SL1047A
Adapter for EV/EVSE emulation SL1040A to SL1201A-STD/SL1202A-STD [SL1049A-220]	300 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 4 mm ² PE: 4 mm ² -20°C...+40°	5 m	5 kg	SL1040A-ST2
	500 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1040A to SL1201A-SDC/SL1202A-SDC [SL1049A-221]	300 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 4 mm ² DC±: 2x 70 mm ² PE: 25 mm ² -20°C...+40°	5 m	5 kg	SL1040A-ST2
	500 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1047A to SL1201A-STD/SL1202A-STD [SL1049A-222]	300 V _{L-N} AC	63 A AC	L1, L2, L3: 3x 16 mm ² N: 25 mm ² PE: 16 mm ² -20°C...+40°C	5 m	7kg	SL1047A
	500 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1047A to SL1201A-SDC/ SL1202A-SDC [SL1049A-223]	300 V _{L-N} AC	63 A AC	L1, L2, L3: 3x 16 mm ² N: 25 mm ² DC±: 2x 50 mm ² PE: 35 mm ² -20°C...+40°C	5 m	12 kg	SL1047A
	500 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1047A to SL1203A-STD [SL1049A-224]	300 V _{L-N} AC	100 A AC	L1, L2, L3, N: 4x 25 mm ² PE: 25 mm ² -20°C...+40°C	5 m	9 kg	SL1047A
	500 V _{L-L} AC					

Adapter cable for EV/EVSE emulation option class	Rated voltage	Rated current	Max. wire cross-section Ambient temperature	Cable length	Approx. weight	CDS compatibility
Adapter for EV/EVSE emulation SL1047A to SL1203A-SDC [SL1049A-225]	300 V _{L-N} AC	100 A AC	L1, L2, L3, N: 4x 25 mm ² DC±: 2x 120 mm ² PE: 35 mm ² -20°C...+40°C	5 m	15 kg	SL1047A
	500 V _{L-L} AC					
	1000 V DC	360 A AC				
Adapter for EV/EVSE emulation SL1040A to SL1203A-SDC [SL1049A-226]	300 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 4 mm ² DC±: 2x 120 mm ² PE: 35 mm ² -20°C...+40°C	5 m	15 kg	SL1040A-ST2
	500 V _{L-L} AC					
	1000 V DC	360 A DC				
Adapter for EV/EVSE emulation SL1047A single-phase to SL12XXA three-phase [SL1049A-227]*	300 V _{L-N} AC	100 A AC	L1, L2, L3: 3x 6 mm ² N: 16 mm ² PE: n/a -20°C...+40°C	5 m	5 kg	SL1047A
	500 V _{L-L} AC					
Adapter for EV/EVSE emulation SL1040A/SL1047A to RP7982A without rack [SL1049A-228]	1500 V DC	90 A DC	DC±: 2x 16 mm ² PE: 6 mm ² -20°C...+40°C	5 m	9 kg	SL1040A-ST2 SL1047A
Adapter for EV/EVSE emulation SL1040A to SL1212A-SDC [SL1049A-229]	300 V _{L-N} AC	32 A AC	L1, L2, L3, N: 4x 4 mm ² DC±: 2x 25 mm ² PE: 25 mm ² -20°C...+40°C	5 m	9 kg	SL1040A-ST2
	500 V _{L-L} AC					
	1000 V DC	90 A DC				
Adapter for EV/EVSE emulation SL1040A to SL18XXA [SL1049A-230]	1500 V DC	400 A DC	DC±: 2x 120 mm ² PE: 35 mm ² -20°C...+40°C	10 m	25 kg	SL1040A-ST2 SL1047A
Adapter for EV/EVSE emulation SL1047A-HP3 to SL18XXA [SL1049A-231]	1500 V DC	600 A DC	DC±: 2x 240 mm ² PE: 35 mm ² -20°C...+40°C	10 m	70 kg	SL1047A
No-HV-Mode-Adapter [SL1049A-232]	N/A		+5°C...+40°C		0.75 kg	SL1040A-ST2 SL1047A
Adapter for EV/EVSE emulation SL1047A to SL1212A-SDC/SL1213A-SDC [SL1049A-233]	300 V _{L-N} AC	65 A AC	L1, L2, L3: 3x 16 mm ² N: 1x 25 mm ² DC±: 2x 50 mm ² PE: 35 mm ² -20°C...+40°C	5 m	13 kg	SL1047A
	500 V _{L-L} AC					
	1000 V DC	180 A DC				

Adapter cable for EV/EVSE emulation option class	Rated voltage	Rated current	Max. wire cross-section Ambient temperature	Cable length	Approx. weight	CDS compatibility
Adapter for EV/EVSE emulation SL1040A to SL1214A-SDC [SL1049A-234]	300 V _{L-N} AC	32 A AC	L1, L2, L3: 3x 4 mm ² N: 4 mm ² DC±: 2x 50 mm ² PE: 25 mm ² -20°C...+40°C	5 m	11 kg	SL1040A
	500 V _{L-L} AC					
	1000 V DC	180 A DC				
Adapter for EV/EVSE emulation SL1047A to SL1214A-SDC [SL1049A-235]	300 V _{L-N} AC	65 A AC	L1, L2, L3: 3x 16 mm ² N: 25 mm ² DC±: 2x 50 mm ² PE: 35 mm ² -20°C...+40°C	5 m	13 kg	SL1047A
	500 V _{L-L} AC					
	1000 V DC	180 A DC				
Adapter for EV/EVSE emulation SL1047A-HP4 to SL18XXA [SL1049A-238]	1500 V DC	800 A DC	DC±: 2x 300 mm ² PE: 35 mm ² -20°C...+40°C	10 m	80 kg	SL1047A

***Note:** For SL1049A-227, the system coding check feature is required (see page 2).

Extend the Capabilities of Your Test Solution

Meet the Scienlab Charging Discovery System family of solutions

Accelerate your charging interface testing and validate charging behavior across EV and EVSE

Keysight's Scienlab Charging Discovery System Series (CDS) supports the latest adapters and protocols used with EVs and EVSE. As use cases, standards, and protocols evolve, our modular, upgradeable portfolio will help you ensure conformance and interoperability today and tomorrow.

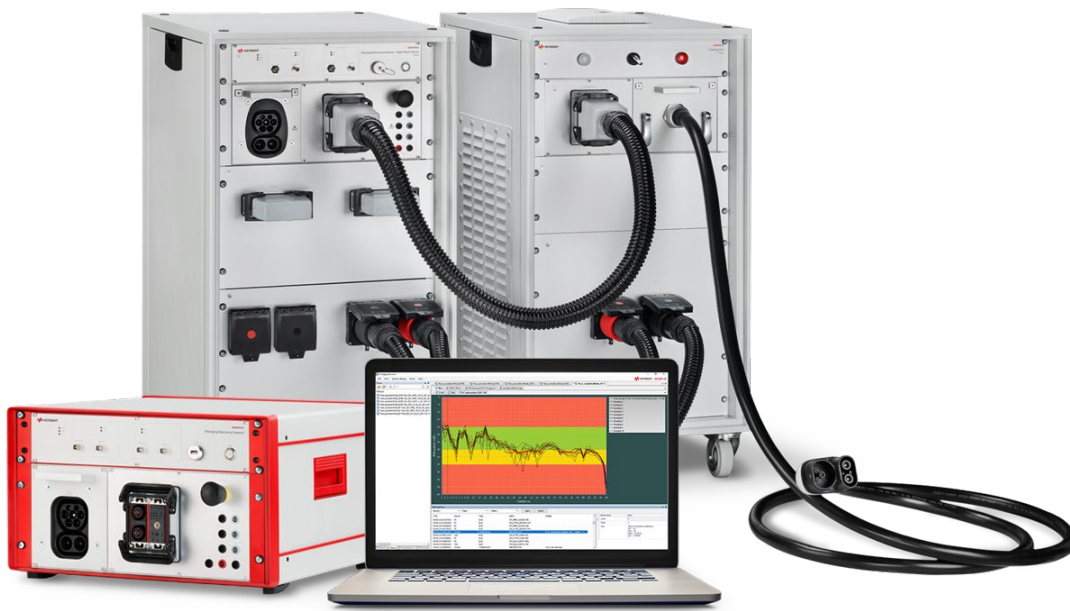


Figure 4. From left to right: SL1040A CDS – Portable Series, SL1047A CDS – High-Power Series, and SL1093A Charging Discover Software.

- Configure the CDS to your specific needs and replace multiple real EV/EVSE with one test solution.
- Address R&D and type-approval applications with automated functional, conformance, interoperability, safety, and quality testing.
- Automate and accelerate conformance testing with pre-programmed test cases.
- Get a holistic view of current and voltage measurements as well as charging communication.

Find out more about SL1040A Scienlab CDS Series [here](#).

Find out more about SL1047A Scienlab CDS – High-Power Series [here](#).

Find out more about SL1093A Scienlab Charging Discover [here](#).

Meet the SL1200A Series Scienlab Regenerative AC Emulator, 3-Phase

The SL1200A Series was designed to handle all your 3-phase AC test needs up to 1200 VAC, from 30 to 630 kVA without the need for a transformer. Two voltage ranges are available: 600 VAC and 1200 VAC. The 600 VAC models are ideal for low-voltage inverter tests as well as EV and EVSE charging test applications. The 1200 VAC models allow for (HVRT) testing at the IEC LV-AC limit without the need for a large, complex test setup.

- Covers AC test needs; up to 1200 V_{L-L}; up to 130 A; up to 630 kVA.
- Achieve 1200 V_{L-L} at full specifications without extra equipment, such as a transformer.
- Save energy with a 100% regenerative (bidirectional) power solution with > 85% efficiency.
- Get up and running immediately with an intuitive Soft Front Panel (SFP).
- Feel confident with a complete, one-vendor solution of hardware, software, consulting, and support services worldwide for many applications, such as EV/EVSE charging tests.



Figure 5. SL1200A Series Scienlab Regenerative AC Emulator

Find out more about the SL1200A Series [here](#).

Meet the SL1800A Scienlab Regenerative DC Emulator – High-Power Series

Keysight's SL1800A Scienlab Regenerative DC Emulator – High-Power Series enables you to emulate the large batteries in electric vehicles. The bidirectional power flow allows emulation of both power sourcing applications, such as traction inverter test, as well as power-absorbing (sinking) applications, such as EV charging. Being regenerative, the power absorbed is delivered back to the grid, saving on energy and cooling costs. With bi-directionality, integrated DC voltage and current controllers, high dynamics, and its regenerative energy feedback capacity, the Scienlab Dynamic DC Emulator provides an all-in-one system for efficient and effective testing of the power electronic components in EV and EVSE.

- Fully integrated with SL1040A and SL1047A Scienlab Charging Discovery System.
- Available for high voltage, high-power applications. Extendable to meet future, increased power needs.
- Energy-efficient source and sink mode (96%).



Figure 6. SL1800A Scienlab Regenerative DC Emulator - High-Power Series

Find out more about the SL1800A Series [here](#).

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.